

REMARKS

This application is a Section 371 of PCT/AU98/01077. New claims 35-68 are pending in the application and stand rejected. Original claims 1-34 have been canceled. Applicant notes with appreciation the Notice of References Cited, PT0-892, but there is no indication of any consideration of Applicants' Information Disclosure Statement filed concurrently with the section 371 documents. A copy of the Information Disclosure Statement and its enclosures is submitted herewith for consideration.

Claims 35-68 are all rejected under 35 U.S.C. 102 (e) as being allegedly anticipated by *Kumar*, U.S. Patent No. 6,005,894. In the rejection, the Examiner states that in *Kumar*, "the claimed providing a carrier signal, imposing a phase modulation of less than 90 degrees to create side bands of substantially lower amplitude, and providing a modulated signal to an antenna is met (see: column 19, lines 36 *et seq.*; col. 20, lines 1 *et seq.*, sometimes noted as [19:36])." Applicants respectfully traverse the rejection and request reconsideration of the claims in view of the following remarks.

Consider first Applicants' disclosure. According to one aspect of one of the present inventions, methods and apparatus are provided for transmitting data from a first antenna wherein the data is modulated, for example in a modulating circuit such as that shown in FIG. 7. In one preferred method, a carrier signal is provided and a phase modulation of less than 90 degrees is imposed on the carrier signal in accordance with a data signal to create a modulated signal. The modulated signal has a carrier frequency and side bands, and the side bands are substantially lower in amplitude than the carrier frequency. The modulated signal is then sent to a first antenna for transmission. Apparatus is also provided for phase modulation of a carrier signal, for example phase modulating the carrier signal by less than 90 degrees.

In accordance with a further aspect of one of the present inventions, the modulated signal is received with a second antenna, and a first signal is thereby produced and provided to a receiver for deriving a second signal representing the data signal. In one preferred form, the first signal is used to power the receiver, so that the receiver is a passive receiver. This allows the power transmission to be very efficient without any reduction in power transmission due to

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modulation. It also allows transmission of data at very high speeds while maintaining low level sidebands, for example for conforming to emissions regulations.

In another form of one of the present inventions, methods and apparatus are described for providing a carrier signal and imposing a phase modulation on the carrier signal in accordance with a data signal to create a modulated signal having a carrier and side bands. The amount of phase modulation is selected such that the amplitude of the side bands is substantially lower than that of the carrier.

Consider now the reference relied upon by the Examiner. *Kumar* shows an AM-compatible digital broadcasting method and system, such as for the terrestrial radio frequency broadcast and reception of a digitally encoded signal together with an analog signal in the conventional AM-band of broadcast frequencies. *Kumar* provides descriptions of a number of prior art methods, and provides descriptions of a number of embodiments for purportedly carrying out the intended method. As noted above, the Examiner refers to text at column 19, lines 36 *et seq.*, and column 20, lines 1, *et seq.* However, the Examiner does not refer to any language that discusses, for example, phase modulation of less than 90 degrees on a carrier signal with a data signal to create a modulated signal having a carrier frequency and side bands where the side bands are substantially lower in amplitude and carrier frequency. Additionally, it is not seen where *Kumar* teaches or suggests phase modulation of a carrier signal at less than 90 degrees. It appears that *Kumar* modulates signals in phase or in quadrature. For example, in FIG. 12, signals are modulated where I is in phase and Q is in quadrature, and the carrier signals are modulated in phase or in quadrature. However, for the embodiment of FIG. 11 and the text referenced by the Examiner, the apparatus or process to which the Examiner refers as demonstrating Applicants' claimed inventions does not appear to even suggest any modulation other than in phase or in quadrature. No anticipation can be seen from *Kumar*.

In other parts of *Kumar*, there are numerous references to modulating signals in phase or in quadrature. For example, FIG. 10 refers to quadrature amplitude modulation [14:55] and FIG. 12 refers to in phase and quadrature signals [15:4-5; 21:50-51; 21:65 - 22:1]. See also the text at [23:30-41], [25: 43-50], [28: 19-25], and [28: 57-61]. In fact, *Kumar* may appear to teach away from Applicants' inventions. For example, *Kumar* states that inner and outer side band regions have frequency-orthogonality [11: 59], and because orthogonality means phase-quadrature [6:

38-40], it appears that the *Kumar* signals are either in phase or phase quadrature, and even though there may not be a requirement for a specific phase relationship, the side bands are coherent [11:58-65]. Therefore, it is not believed that anything in *Kumar* teaches or suggests, let alone anticipates, Applicants' inventions, and it may even teach away from the inventions.

Consider now several of the claims in the present application. Claim 35 is an independent method claim reciting in part:

“providing a carrier signal;

“imposing a phase modulation of less than 90° on the carrier signal in accordance with a data signal to create a modulated signal having a carrier frequency and sidebands, the sidebands being substantially lower in amplitude than the carrier frequency; and

“providing the modulated signal to said first antenna for transmission.”

Nothing in *Kumar* teaches or suggests imposing a phase modulation of less than 90 degrees on a carrier signal in accordance with a data signal to create a modulated signal having a carrier frequency and side bands, the side bands being substantially lower in amplitude than the carrier frequency. The Examiner has failed to identify how *Kumar* anticipates claim 35. *Kumar* may even teach away from the claimed inventions.

Claims 36-39 are claims dependent directly or indirectly from independent claim 35 and are asserted as being patentable for the same reasons as were discussed above with respect to claim 35, for the additional limitations contained in the dependent claims as well as for the combinations claimed in the dependent claims. Note for example claim 37 reciting in part "wherein the first signal is used to power the receiver means." Applicants have been unable to locate any teaching or suggestion in *Kumar* that even mentions this feature. It is unclear how *Kumar* anticipates these dependent claims.

Claim 40 is an independent apparatus claim and recites in part:

“a first antenna;

“oscillator means for providing a carrier signal; and

“mixing means for imposing a phase modulation of less than 90° on the carrier signal in accordance with a data signal to create a modulated signal, the mixing means also providing the modulated signal to the first antenna for transmission, wherein the modulated signal has a carrier frequency and sidebands, the sidebands being substantially lower in amplitude than the carrier frequency.”

Nothing in *Kumar* teaches or suggests any apparatus for imposing a phase modulation of less than 90 degrees on the carrier signal in accordance with a data signal to create a modulated signal, and mixing means also providing the modulated signal to the first antenna for transmission, wherein the modulated signal has a carrier frequency and side bands, the side bands being substantially lower in amplitude than the carrier frequency. It is not seen how *Kumar* anticipates or even renders obvious claim 40.

Claims 41-47 are apparatus claims dependent directly or indirectly from independent claim 40 and are asserted as being patentable for the same reasons as were discussed above with respect to claim 40, for the additional limitations contained in the dependent claims as well as for the combinations claimed in the dependent claims. Note in particular claim 42 reciting in part "wherein the first signal is used to power the receiver means." Note claim 45 reciting in part "wherein the antenna is a tunable coil." Note claim 47 reciting in part a system for identifying luggage.

Claims 48-68 are independent and dependent claims that are patentable for reasons similar to those discussed above. *Kumar* fails to anticipate or even render obvious the claims in the present application.

Reconsideration of the application and claims in view of the foregoing amendments and remarks is respectfully requested. Early notice of allowance thereof is earnestly solicited.

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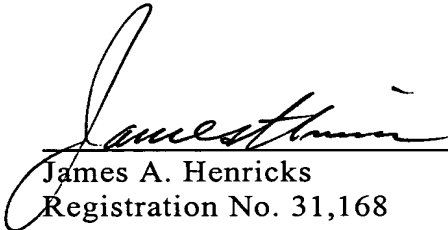
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Please charge any additional fees that may be due or credit any overpayments to our deposit Account No. 50-0655. A duplicate copy of this document is enclosed.

This response is being filed with a three-month extension of time.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

Claims 47 and 66 have been amended as follows:

47. (Amended) A system according to claim 46 ~~48~~ for identifying luggage.

66. (Amended)..A system according to claim 65 ~~67~~ configured for identifying luggage.